

General Permit for Discharges with Low Threat to Water Quality

California American Water
Company, Pilot Desalination Plant,
Moss Landing, Monterey County
[Peter von Langen 805/549-3688]

On July 26, 2006, California American Water Company (Discharger) submitted a complete application and Notice of Intent for enrollment under the Low-Threat General Permit, WDR Order No. 01-119. The Discharger proposes to construct a pilot seawater desalination plant on property owned by LS Power in Moss Landing, Monterey County and to operate the plant for up to one year (Attachment 1). Monterey County certified the project's compliance with CEQA and issued a development permit on July 13, 2006.

The pilot desalination plant will produce an average of 0.08 million gallons per day (MGD) of waste desalination brine and 0.06 MGD of product water. The Discharger proposes to combine the brine and product water with the large flow (up to 750 MGD) of LS Power's once-through cooling (OTC) water, which is regulated by Waste Discharge Requirements Order No. 00-041. The combined pilot desalination plant and OTC flows will be discharged to the Pacific Ocean through LS Power's existing outfall-diffuser system.

The Discharger proposes to control pH, solids concentrations, chlorine residual concentrations, and scaling in the desalination equipment by

adding small quantities (total less than 129 pounds per day) of inorganic chemicals (Sodium Hypochlorite, Sulfuric Acid, Ferric Chloride, Powdered Activated Carbon (PAC), Antiscalant, Sodium Hydroxide, and Sodium Bisulfite) to the discharge and by treating the desalination feed water via micro-filtration (Attachment 2). These treatment chemicals are approved for use in potable drinking water. Waste Discharge Requirements Order No. 00-041, which the Water Board issued in 2000, establishes effluent limitations and other requirements that protect the Pacific Ocean's beneficial uses from existing and threatened adverse effects posed by the wastewater discharge from the Moss Landing Power Plant.

The large flow of OTC water will render insignificant any potential adverse effects of the chemical additives on ocean water quality. That is, the concentrations in the pilot plant's discharge will not degrade receiving waters even if it were to be discharged directly. However, those concentrations will be further reduced due to the dilution (approximately 5350:1) provided by OTC.

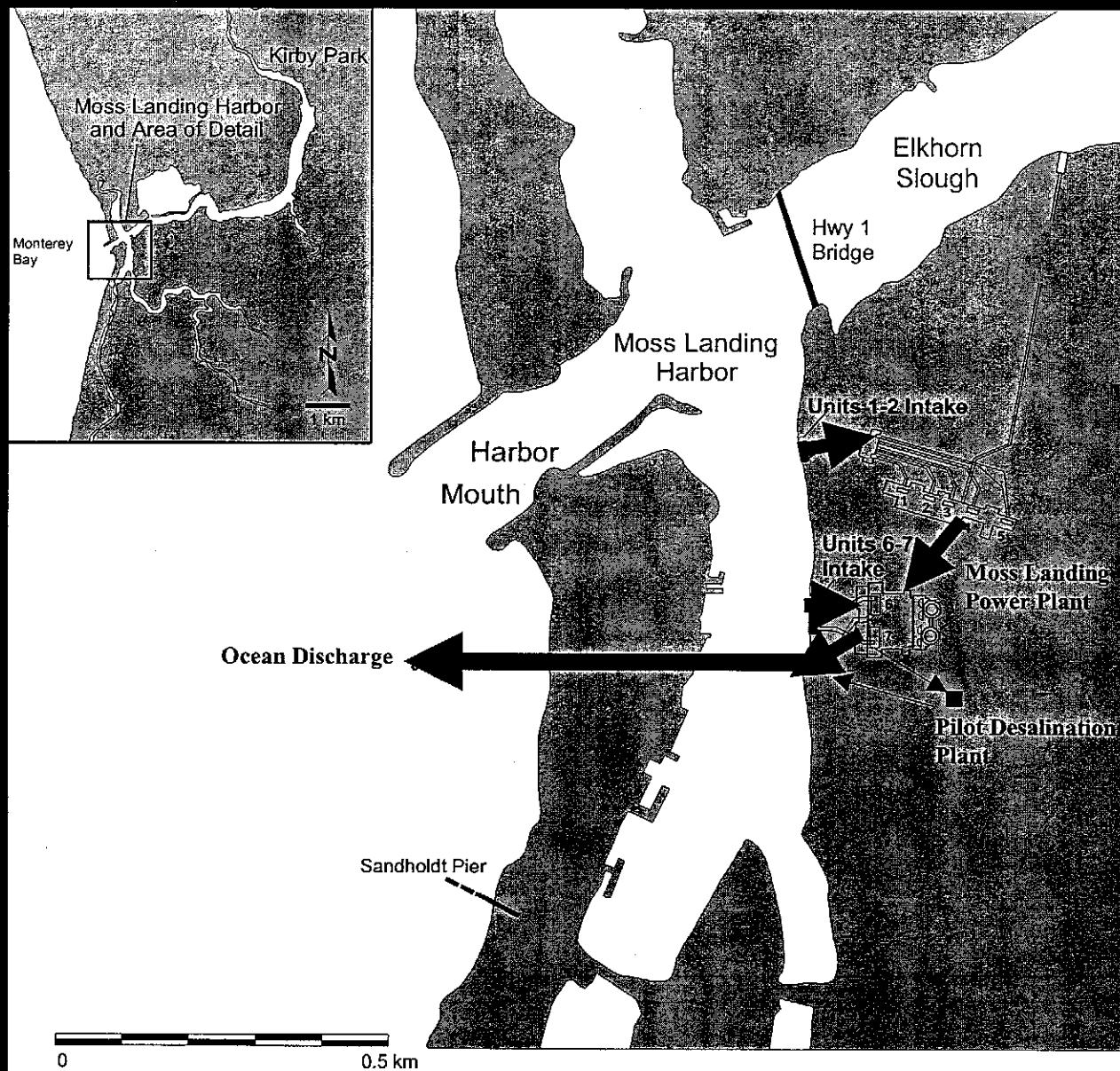
Additionally, wastes produced during filter backwash and cleaning will be collected in storage tanks and disposed of offsite. There are no impingement and entrainment issues attributable to this pilot desalination plant because the facility takes its source water from the power plant OTC system. Due to the low threat of the pilot plant discharge to the

water quality of the Pacific Ocean, staff recommends regulating this discharge through enrollment in the General Permit. Unless the Water Board objects, staff will notify the Discharger of the enrollment and require compliance with Monitoring and Reporting Program No. 01-119, modified for this discharge. A full scale facility would be regulated by an individual permit.

Attachments

1. Map of Moss Landing showing intake and discharge points
2. Table of inorganic chemical usage

S:\NPDES\NPDES Facilities\Monterey Co_Low Threat Discharge General Permit, 01-119\Cal-Am Water, Moss Landing\Cal-Am water report.doc



Attachment 1. Map of Moss Landing showing intakes and discharge of pilot desalination project and power plant.

Attachment 2

TABLE 2
CHEMICAL USAGE SUMMARY

Chemical	Max Dose (mg/L)	Flow (gpm)	Mass/Day (lbs/day)	Cooling Water Concentration- Min flow (mg/L) ¹	Cooling Water Concentration-Normal flow (mg/L) ²
Sodium Hypochlorite	3	100	3.6	0.00432	0.00036
Sulfuric Acid	50	100	60	0.07200	0.00600
Ferric Chloride	10	100	12	0.01440	0.00120
PAC	7	100	8.4	0.01008	0.00084
Antiscalant	3	40	1.44	0.00173	0.00014
Sodium Hydroxide	50	40	24	0.02880	0.00240
Sodium Bisulfite	40	40	19.2	0.02304	0.00192

1. Minimum flow in cooling water system: 100 MGD
2. Normal flow in cooling water system: 1,200 MGD